

PARTIAL ATOMIC LAYER EPITAXIAL METHOD

PARTIAL ATOMIC LAYER EPITAXIAL METHOD

Patent Number: JP58100419

Publication date: 1983-06-15

Inventor(s): IWAMATSU SEIICHI

Applicant(s): SUWA SEIKOSHA KK

Requested Patent: JP58100419

Application Number: JP19810199020 19811210

Priority Number(s):

IPC Classification: H01L21/20; H01L21/26

EC Classification:

EC Classification:

Equivalents:

Abstract

PURPOSE: To permit growth of an epitaxial layer of a partial atomic layer by a method wherein atoms or molecules are partially adsorbed on the surface of a substrate so that a part of atoms or molecular-constituting atoms is coupled to the substrate surface.

CONSTITUTION: The surface of an Si substrate 1 containing P is cleaned through plasma in an Ar vacuum container, and chlorine gas is passed to form a Cl adsorption layer 2 on the surface of the substrate 1 at the room temperature. Then, the substrate 1 is heated up to about 100 deg.C, so that only P atoms are converted to PCI₃ and evaporated. By passing BBr₃ at the room temperature in that state, B forms an adsorption layer 3 together with Br in positions where P atoms have been removed from the surface of the substrate 1. Then, by passing hydrogen on the substrate 1 at the room temperature, Cl, Br, etc. are converted to HCl, HBr, etc. and removed, whereby P atoms are replaced by B atoms which are buried in position where P atoms have existed.